

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently Amended) In a computer system in which an object that is an instance of a user defined type can be persisted in a database store, wherein a definition of the user defined type comprises a plurality of fields, each of said plurality of fields ~~having a respective data type~~ being assigned any one of a plurality of data types supported by the database store, at least one of said plurality of fields of the definition being designated as containing data ~~of a type~~ that is to be stored as a file outside of the database store separately from the data of the other of said plurality of fields of the type definition without altering the assigned data type of said at least one designated field, a method comprising:

receiving a request to store an object that is an instance of the user defined type;

determining from the designation of said at least one field that the data of that field is to be stored as a file outside of the database store irrespective of the assigned data type of that field;

storing the data in said at least one designated field of said plurality of fields of the instance of the user defined type as a file outside of the database store; and

storing the data in each of the other fields of said plurality of fields of the instance of the user defined type within the database store.

2. (Original) The method recited in claim 1, further comprising providing a link between the data of the fields of the object that are stored within the database store and the data of the field that is stored as a file outside of the database store.

3. (Original) The method recited in claim 1, wherein the data of the fields of the object that are stored within the database store are stored as fragments within a column of a table of the database, the column having been designated as the user defined type.

4. (Original) The method recited in claim 3, wherein a unique identifier associated with the object is stored in another column of the table in a same row as the data of the fields of the object.

5. (Currently Amended) The method recited in claim 1, ~~wherein the data in said at least one designated field of the object is stored as a file within a predetermined directory of a file system of a computer on which the database server is executing~~ further comprising: creating a unique directory within a file system of the computer for storing files containing the data of said at least one designated field of every instance of the user defined type; and
storing the data of said at least one designated field of every instance of the user defined type as a respective file within the created directory.

6. (Currently Amended) The method recited in claim 5 ~~1~~, further comprising providing access by an application to the file in which the data of said at least one field is stored outside the database store via ~~the~~ a file system of the computer.

7. (Original) The method recited in claim 6, wherein said step of providing access by an application to the file in which the data of said at least one field is stored comprises:

receiving a call from the application, via an application programming interface to the file system of the computer, to open the file, wherein the call identifies the field of the object by its identity within the database store;

determining from the identity of the field of the object within the database store a path within the file system of the computer to the file containing the data of that field of the object; and

executing the call to open the file using the determined path.

8. (Original) The method recited in claim 7 wherein the file system of the computer comprises a Microsoft NTFS file system and wherein the application programming interface to the file system comprises the Win32 application programming interface.

9. (Original) The method recited in claim 1, wherein the type of the object is defined as a class in managed code.

Claims 10 – 24 (CANCELED).

25. (Currently Amended) A computer readable medium having program code stored thereon for use in a computer system in which an object that is an instance of a user defined type can be persisted in a database store, wherein a definition of the user defined type comprises a plurality of fields, each of said plurality of fields ~~having a respective data type~~ being assigned any one of a plurality of data types supported by the database store, at least one of said plurality of fields of the definition being designated as containing data ~~of a type~~ that is to be stored as a file outside of the database store separately from the data of the other of said plurality of fields of the type definition without altering the assigned data type of said at least one designated field, said program code, when executed on a computer system, causing the computer system to:

receive a request to store an object that is an instance of the user defined type;
determine from the designation of said at least one field that the data of that field is to be stored as a file outside of the database store irrespective of the assigned data type of that field;

store the data in said at least one designated field of said plurality of fields of the instance of the user defined type as a file outside of the database store; and

store the data in each of the other fields of said plurality of fields of the instance of the user defined type within the database store.

26. (Original) The computer readable medium recited in claim 25, wherein the program code further causes the computer to provide a link between the data of the fields of the object that are stored within the database store and the data of the field that is stored as a file outside of the database store.

27. (Original) The computer readable medium recited in claim 25, wherein the program code further causes the data of the fields of the object that are stored within the database store to be stored as fragments within a column of a table of the database, the column having been designated as the user defined type.

28. (Original) The computer readable medium recited in claim 27, wherein the program code further causes the computer to store a unique identifier associated with the object in another column of the table in a same row as the data of the fields of the object.

29. (Currently Amended) The computer readable medium recited in claim 25, wherein the program code causes the computer to ~~store the data in said at least one designated field of the object as a file within a predetermined directory of a file system of a computer on which the system is implemented~~ create a unique directory within a file system of the computer for storing files containing the data of said at least one designated field of every instance of the user defined type and store the data of said at least one designated field of every instance of the user defined type as a respective file within the created directory.

30. (Currently Amended) The computer readable medium recited in claim ~~29~~ 25, wherein the program code further causes the computer to provide access by an application to the file in which the data of said at least one field is stored outside the database store via ~~the a~~ a file system of the computer.

31. (Original) The computer readable medium recited in claim 30, wherein the program code causes the computer to provide access by an application to the file in which the data of said at least one field is stored by:

receiving a call from the application, via an application programming interface to the file system of the computer, to open the file, wherein the call identifies the field of the object by its identity within the database store;

determining from the identity of the field of the object within the database store a path within the file system of the computer to the file containing the data of that field of the object; and

executing the call to open the file using the determined path.

32. (Original) The computer readable medium recited in claim 31 wherein the file system of the computer comprises a Microsoft NTFS file system and wherein the application

programming interface to the file system comprises the Win32 application programming interface.

33. (Original) The computer readable medium recited in claim 25, wherein the type of the object is defined as a class in managed code.

34. (New) The method recited in claim 5, wherein instances of a plurality of different user defined types can be persisted in the database store, each of said plurality of user defined types having at least one field designated as containing data that is to be stored as a file outside of the database store separately from the data of other fields of the user defined type, and wherein the method further comprises:

for each user defined type, creating a different unique directory within the file system for storing files containing the data of said at least one designated field of every instance of that user defined type.

35. (New) The method recited in claim 1, further comprising:
performing a database operation on the data of said at least one designated field of the instance of the user-defined type, wherein the database operation is performed on the data of said at least one designated field as if it were stored within the database store.

36. (New) The method recited in claim 35, wherein the database operation may comprise one of an INSERT, UPDATE or DELETE operation.

37. (New) The computer readable medium recited in claim 29, wherein instances of a plurality of different user defined types can be persisted in the database store, each of said plurality of user defined types having at least one field designated as containing data that is to be stored as a file outside of the database store separately from the data of other fields of the user defined type, and wherein the program code further causes the computer to:

for each user defined type, create a different unique directory within the file system for storing files containing the data of said at least one designated field of every instance of that user defined type.

38. (New) The computer readable medium recited in claim 25, wherein the program code further causes the computer to:

perform a database operation on the data of said at least one designated field of the instance of the user-defined type, wherein the database operation is performed on the data of said at least one designated field as if it were stored within the database store.

39. (New) The computer readable medium recited in claim 38, wherein the database operation may comprise one of an INSERT, UPDATE or DELETE operation.